Day/Night Box Camera

User Manual

V 3.0.0

Hangzhou Hikvision Digital Technology Co., Ltd.

http://www.hikvision.com

Thank you for purchasing our product. If there are any questions, or requests, please do not hesitate to contact the dealer.

This manual applies to DS-2CC1102P(N)(-A), DS-2CC1112P(N)(-A), DS-2CC1172P(N)(-A), DS-2CC1182P(N)(-A), DS-2CC1192P(N)(-A) Day/Night Box Camera.

This manual may contain several technical incorrect places or printing errors, and the content is subject to change without notice. The updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in the manual.

DISCLAIMER STATEMENT

"Underwriters Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested for fire, shock or casualty hazards as outlined in UL's Standard(s) for Safety, UL60950-1. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product. UL MAKES NO REPRESENTATIONS, WARRANTIES OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING RELATED FUNCTIONS OF THIS PRODUCT."

Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

CE This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC.

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

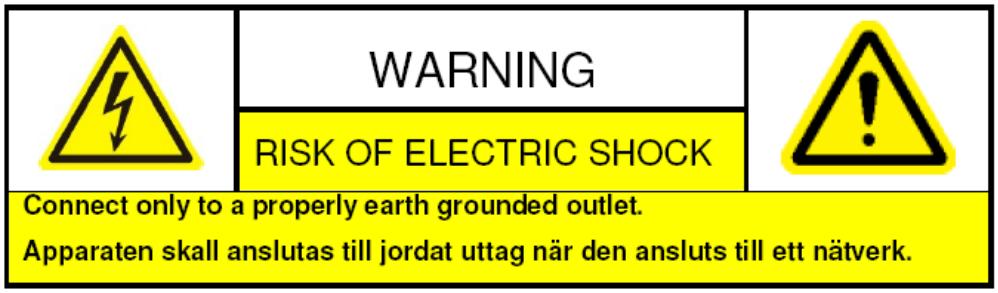
Safety Warnings and Cautions

Please pay attention to the following warnings and cautions:

Hazardous Voltage may be present: Special measures and precautions must be taken when using this device. Some potentials (voltages) on the device may present a hazard to the user. This device should only be used by HIKVISION Employees with knowledge and training in working with these types of devices that contain live circuits.

Caution
The power supply in this product contains no user-serviceable parts. Refer servicing only to qualified personel.

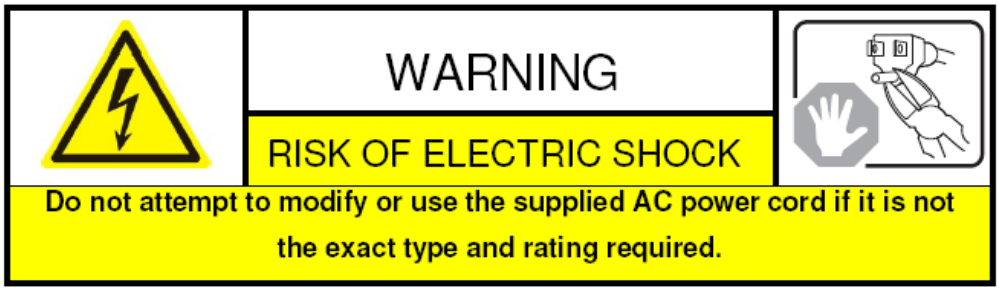
Power Supply Hazardous Voltage: AC mains voltages are present within the power supply assembly. This device must be connected to a UL approved, completely enclosed power supply, of the proper rated voltage and current. **No user serviceable parts inside the power supply.**


WARNING
RISK OF ELECTRIC SHOCK
Connect only to a properly earth grounded outlet.
Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk.

System Grounding (Earthing): To avoid shock, ensure that all AC wiring is not exposed and that the earth grounding is maintained. Ensure that any equipment to which this device will be attached is also connected to properly wired grounded receptacles and are approved medical devices.

Power Connect and Disconnect: The AC power supply cord is the main disconnect device to mains (AC power).The socket outlet shall be installed near the equipment and shall be readily accessible.

Installation and Maintenance: Do not connect/disconnect any cables to or perform installation/maintenance on this device during an electrical storm.


WARNING
RISK OF ELECTRIC SHOCK
Do not attempt to modify or use the supplied AC power cord if it is not the exact type and rating required.

Power Cord Requirements: The connector that plugs into the wall outlet must be a grounding-type male plug designed for use in your region. It must have certification marks showing certification by an agency in your region. The connector that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13, female connector. See the following website for more information http://kropla.com/electric2.htm.

Lithium Battery: This device contains a Lithium Battery. There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the vendor's instructions and in accordance with local environmental regulations.

Perchlorate Material: Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate. This notice is required by California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials. This device includes a battery which contains perchlorate material.

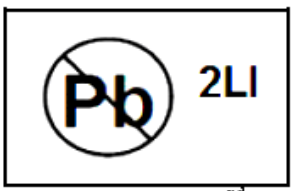
Taiwan battery recycling:

Please recycle batteries.

Thermal and Mechanical Injury: Some components such as heat sinks, power regulators, and processors may be hot; care should be taken to avoid contact with these components.

Electro Magnetic Interference: This equipment has not been tested for compliance with emissions limits of FCC and similar international regulations. This device is not, and may not be, offered for sale or lease, or sold, or leased until authorization from the United States FCC or its equivalent in other countries has been obtained. Use of this equipment in a residential location is prohibited. This equipment generates, uses and can radiate radio frequency energy which may result in harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is required to take measures to eliminate the interference or discontinue the use of this equipment.

Lead Content:



Please recycle this device in a responsible manner. Refer to local environmental regulations for proper recycling; do not dispose of device in unsorted municipal waste.

Safety Instruction

These instructions are intended to ensure that the user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into 'Warnings' and 'Cautions':

Warnings: Serious injury or death may be caused if any of these warnings are neglected.

Cautions: Injury or equipment damage may be caused if any of these cautions are neglected.

Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

Warnings:

1. In the use of the product, you must strictly comply with the electrical safety regulations of the nation and region.
2. Source with DC 12V or AC 24V according to the IEC60950-1 standard. Please refer to technical specifications for more details.
3. Do not connect several devices to one power adapter as an adapter overload may cause over-heating and can be a fire hazard. If use the POE as the power supply, please make sure that the POE Switch have the sufficient power.
4. Please make sure that the plug is firmly inserted into the power socket.
5. When the product is installed on a wall or ceiling, the device should be firmly fixed.
6. If smoke, odor, or noise rise from the device, turn off the power at once and unplug the power cable, then contact the service center.
7. If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

Notice:

1. Make sure the power supply voltage is correct before using the camera.
2. Do not drop the camera or subject it to physical shock.
3. Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.
4. Do not aim the camera at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor at the same time.
5. The sensor may be burned out by a laser beam, so when any laser equipment is being used, make sure that the surface of the sensor will not be exposed to the laser beam.
6. Do not place the camera in extremely hot or cold temperatures (the operating temperature should be between -10°C ~ 60°C, dusty or damp locations, and do not expose it to high electromagnetic radiation.
7. To avoid heat accumulation, good ventilation is required for a proper operating environment.
8. While shipping, the camera should be packed in its original packing, or packing of the same texture.
9. Regular part replacement: a few parts (e.g. electrolytic capacitor) of the equipment should be replaced regularly according to their average life time. The average time varies because of differences between operating environment and usage history, so regular checking is recommended for all users. Please contact with your dealer for more details.
10. Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Table of Contents

Chapter 1 Introduction 8

1.1 Product Features 8

1.2 Chief Introduction about Function 8

1.3 Introduction of Box Camera Side Plate and Rear plate 9

1.3.1 The description of DS-2CC1102/1112/1172/1182/1192P(N)-A rear panel 9

1.3.2 The description of DS-2CC1102/1112/1172/1182/1192P(N) rear panel 11

1.3.3 Introduction of Box Camera Side Plate 12

Chapter 2 Installation 14

2.1 Mounting 14

2.2 Wiring 16

Appendix Specification 17

Table 1 DS-2CC1102P(N)(-A) 17

Table 2 DS-2CC1112P(N)(-A) 19

Table 3 DS-2CC1172P(N)(-A) 21

Table 4 DS-2CC1182P(N)(-A) 23

Table 5 DS-2CC1192P(N)(-A) 25

Chapter 1 Introduction

1.1 Product Features

This camera adopts high performance CCD and advanced print circuit board design technology, and possesses of high resolution, low distortion, low noise features etc, which extremely suitable for supervisory system and image process system.

- Adopt high performance image sensor, and supply high definition and clear image
- Low illumination, Day / Night with Auto Switch
- Support Back Light Compensation to monitor front scenery in back light condition
- Support auto white balance with high color rendition
- High SNR give rise to clear and pleased image
- Support auto electronic shutter control to adapt to different environments
- Support auto gain control, adaptive brightness
- Support auto iris
- Advanced design technology with high reliability
- Convenient back focus adjustment

1.2 Chief Introduction about Function

Color B/W auto switch: The camera will display color image and become monochrome automatically at night.

AGC: When object being shot look dim, please turn on AGC. It is propitious to enhance brightness. To output standard video under different illumination, the range of auto gain control must be large enough. When under low illumination, AGC will increase camera's sensitivity, and output bright and clear video.

S/N ratio: It is the ratio of Signal voltage and noise voltage. The ratio is larger, the effect of noise is less, and the image is more spotless.

White Balance: Because the camera could not adjust the color temperature according to the light alteration as the eyes, that will cause color deviation. White balance is the white rendition ability of the camera to adjust the problem according to the environment automatically.

1.3 Introduction of Box Camera Side Plate and Rear plate

1.3.1 The description of DS-2CC1102/1112/1172/1182/1192P(N)-A rear panel

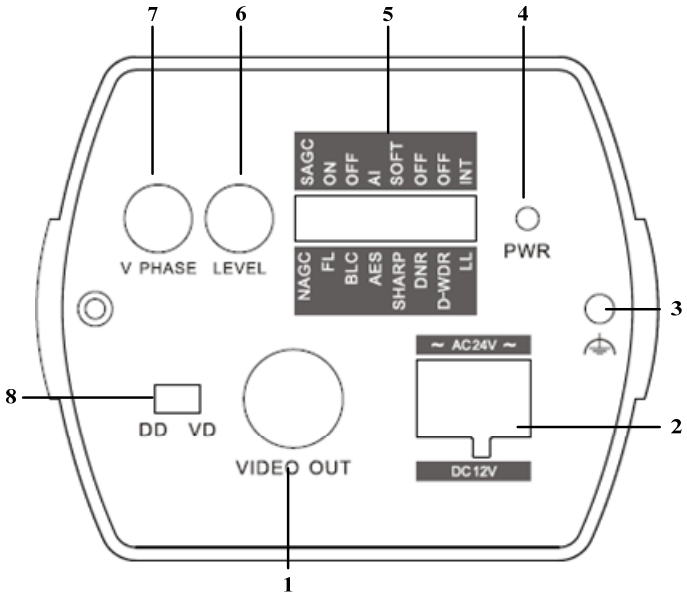


Fig. 1.3.1 The rear panel of box camera

1. Video output: 1Vp-p composite output (75 Ω/BNC).

2. Power supply: Support 12 V DC and 24 V AC.

3. GND.

4. POWER: Power supply indicator, the LED light will turn on as the power supply is proper.

5. Function dial switch: The switches are used to configure different functions.

Note: Model DS-2CC1102P(N)-A doesn't have DNR and D-WDR switches.

Descriptions of the switches are shown as following:

NAGC	Normal AGC: Normal auto gain control, the value is approximate 30dB with NAGC on.
SAGC	Super AGC: Super auto gain control, the value is approximate 60dB with SAGC on.
FL	Flickerless: Turn this switch to ON to get rid of flickers which are caused by

	different power consumption circuits (different signal system for example).
BLC	Back light compensation: The exposure value for compensating back light will be adjusted automatically when this feature is enabled.
AI	Auto iris: Please turn switch to AI when auto iris lens is used.
AES	Auto electronic shutter: Please turn switch to AES when auto iris lens is not used.
SHARP	Sharpness: Lines of sceneries will be straighter with this function on.
SOFT	Sharpness: Edges and corners will be softer with this function on.
DNR	Digital noise reduction: Enable this function to reduce noise effectively.
D-WDR	Digital wide dynamic range: Enable this function to enlarge wide dynamic range.
LL	Power synchronization: Please turn switch to LL when power synchronization mode is needed.
INT	Internal synchronization: Please turn switch to INT when internal synchronization mode is needed.

6. LEVEL adjustment button: This button is used to enhance image brightness when auto iris lens is used and driven by direct current. And the LEVEL adjustment is invalid when auto iris lens is driven by video.

7. V PHASE (power synchronization phase) adjustment button: This button is used to adjust the phase of power synchronization under power synchronization mode. And the V PHASE adjustment is invalid under internal synchronization mode.

8. DD, VD switch: Both the auto iris driven by DC and the auto iris driven by video can be connected to the camera. Please turn switch to DD mode when DC drive auto iris lens is used and turn switch to VD mode when video drive auto iris lens is used.

1.3.2 The description of DS-2CC1102/1112/1172/1182/1192P(N) rear panel

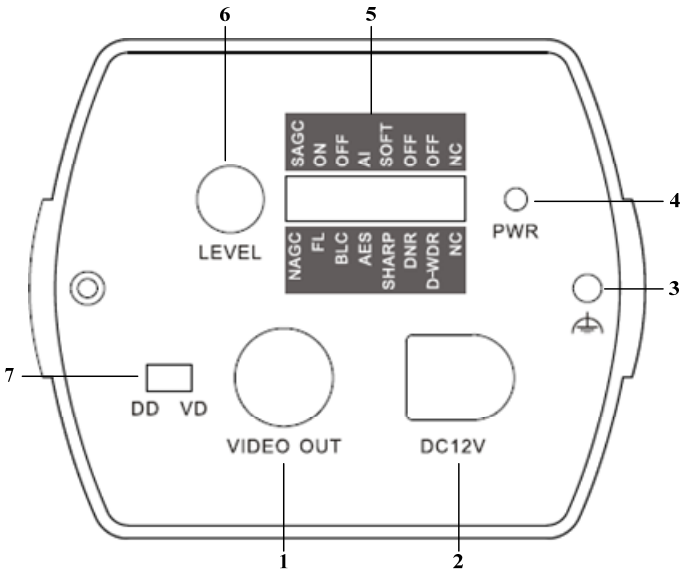


Fig. 1.3.2 The rear panel of box camera (12 V DC)

1. Video output: 1Vp-p composite output (75 Ω/BNC).

2. Power supply: Support 12 V DC.

3. GND.

4. POWER: Power supply indicator, the LED light will turn on as the power supply is proper.

5. Function dial switch: The switches are used to configure different functions.

Note: Model DS-2CC1102P(N) doesn't have DNR and D-WDR switches.

Descriptions of the switches are shown as following:

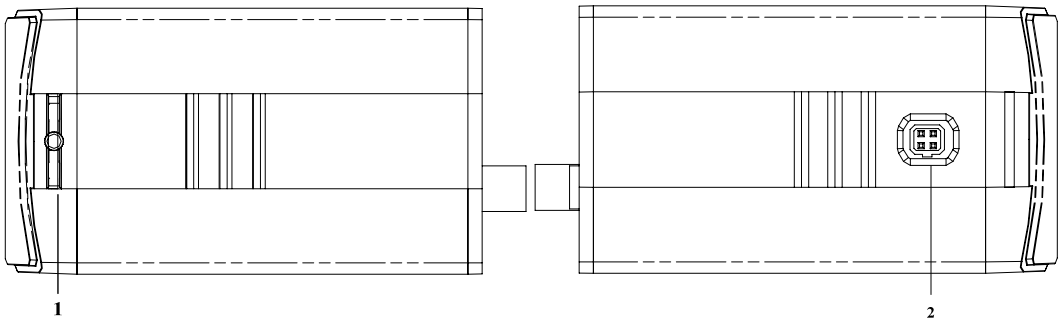
NAGC	Normal AGC: Normal auto gain control, the value is approximate 30dB with NAGC on.
SAGC	Super AGC: Super auto gain control, the value is approximate 60dB with SAGC on.
FL	Flickerless: Turn this switch to ON to get rid of flickers which are caused by different power consumption circuits (different signal system for example).
BLC	Back light compensation: The exposure value for compensating back light will be adjusted automatically when this feature is enabled.

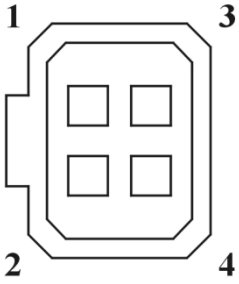
AI	Auto iris: Please turn switch to AI when auto iris lens is used.
AES	Auto electronic shutter: Please turn switch to AES when auto iris lens is not used.
SHARP	Sharpness: Lines of sceneries will be straighter with this function on
SOFT	Sharpness: Edges and corners will be softer with this function on.
DNR	Digital noise reduction: Enable this function to reduce noise effectively.
D-WDR	Digital wide dynamic range: Enable this function to enlarge wide dynamic range.
NC	Reserved button

6. LEVEL adjustment button: This button is used to enhance image brightness when auto iris lens is used and driven by direct current. And the LEVEL adjustment is invalid when auto iris lens is driven by video.

7. DD, VD switch: Both the auto iris driven by DC and the auto iris driven by video can be connected to the camera. Please turn switch to DD mode when DC drive auto iris lens is used and turn switch to VD mode when video drive auto iris lens is used.

1.3.3 Introduction of Box Camera Side Plate





	Video	DC
1	Power	Damp-
2	NC	Damp+
3	Video	Driver+
4	GND	Driver-

Fig. 1.3.2 Back focus ring, auto iris interface definition

1. Back Focus Adjustment Stick: The back focus has been configured to optimum value acquiescently. But it can be adjusted slightly to coordinate with different lens. Adjust the back focus stick when the lens connector has been confirmed but the lens is still not focalized.

The steps are as below: Firstly, tighten the lens, then loose the set screw of back focus stick, and adjust the stick left and right until lens gets clear image, lastly lock the set screw.

2. Auto Iris Interface:

There is an interface for auto iris, the type is negative pattern four square holes, and the definition of pins is shown in the figure above. The interface of video drive auto iris is using three pins, i.e. Power +, Video, GND; the interface of direct drive auto iris is using four pins, i.e. damp+, damp-, drive+, drive-.

Auto Iris Video Drive: The camera inputs the video signal level into lens interior, and internal drive circuit outputs control voltage to adjust lens aperture through electronic motor;

Auto IRIS Direct Current Drive: The camera interior adds lens aperture electronic motor’s drive circuit, and can directly output DC control voltage to control lens electronic motor.

Chapter 2 Installation

Before mounting, please make sure that the device in the package is in good condition and all the assembly parts are complete.

2.1 Mounting

Note: The lens weight must be less than the 1kg CS assembly. After installation the plane the outshoot must be less than 5mm. When using the C assembly lens, please adopt C to assemble the adapter.

There are two mounting methods for box camera: wall mounting, ceiling mounting, which depends on the demand of the customers. Please stick to the following steps (take ceiling mounting for example, wall mounting steps are the same).

Select the mounting method, and mount camera bracket according to the mounting method. For cement wall, first you need to mount expansion screw (the mounting holes of it needs to be the same with bracket), then mount the bracket, shown as figure 2.1. For the woodiness wall, then skip the first step, and mount the bracket with self-tapping screw. Please note that the mounting wall needs to sustain the weight 3 times heavier than the sum weight of camera and bracket.

Mounting the camera. Screw the camera in the bracket by using the mount base at the top of camera.

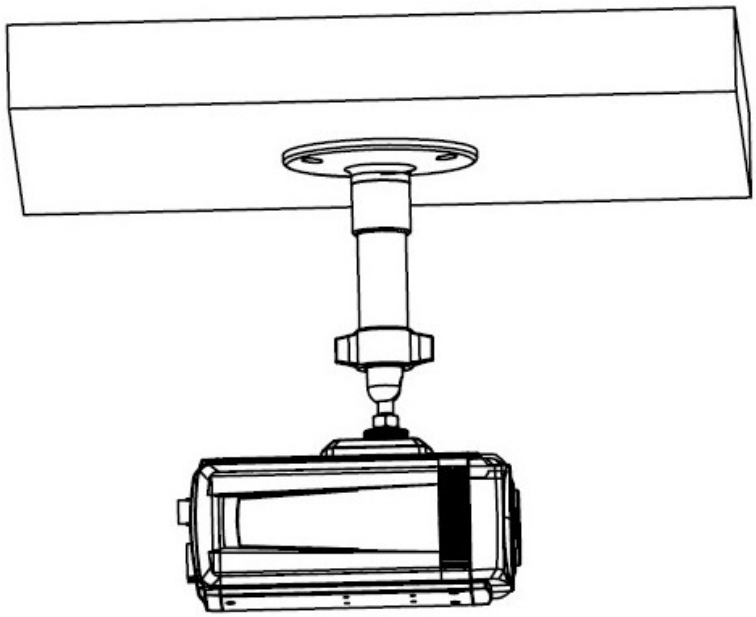


Fig. 2.1 Install the camera

1. Adjust the camera and move it to the monitoring point, and screw down the knob in the bracket, fix the camera.

2. Screw the lens into the head of the camera, adjust the focus, and fasten the lens.

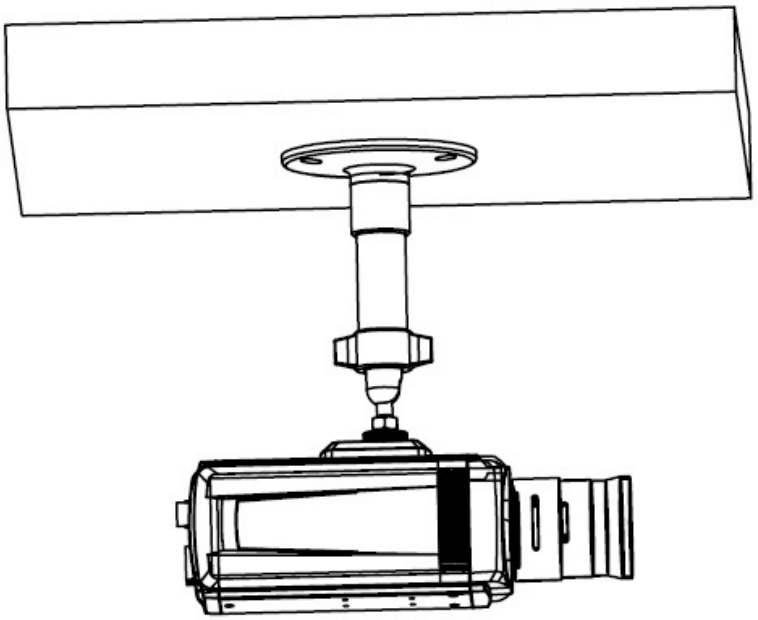


Fig. 2.2 Install the lens

2.2 Wiring

Rear Panel Linkage of Box Camera:

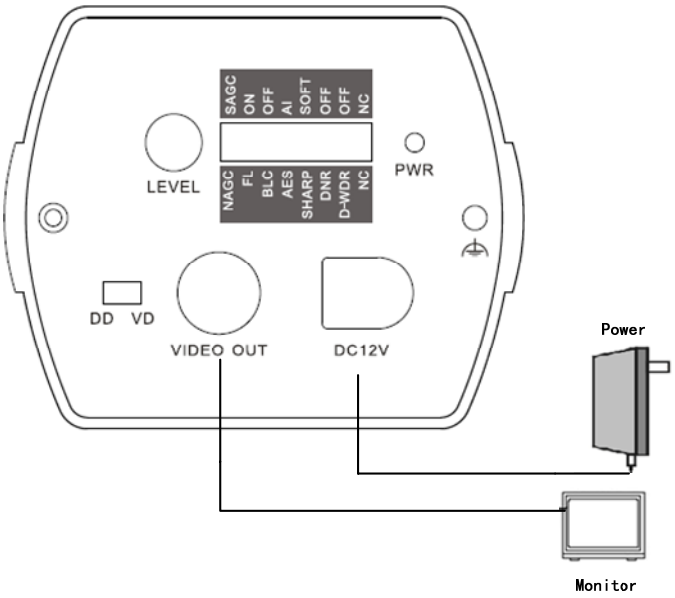


Fig. 2.3 Rear panel Linkage

Note: Please use standard power supply of the camera normally with 12 V DC or 24 V AC. (refer to appendix specification for more detailed information).

Appendix Specification

Table 1 DS-2CC1102P(N)(-A)

Specification

Model / Parameter	DS-2CC1102P(N)(-A)
	420 TVL CCD Box Camera
Camera	
Image Sensor	1/3” SONY Super HAD CCD II
Signal System	PAL/NTSC
Effective Pixels	PAL: 500 (H) × 582 (V) NTSC: 510 (H) × 492 (V)
Min. Illumination	0.1 Lux @ (F1.2, AGC ON)
Shutter Time	PAL: 1/50 s to 1/100,000 s NTSC: 1/60 s to 1/100,000 s
Lens Mount	C/CS mount
Auto Iris	DC/Video drive
Day & Night	Electronic
Horizontal Resolution	420 TVL
Synchronization	Internal synchronization (-A series support power synchronization)
Video Output	1Vp-p composite output (75 Ω/BNC)
S/N Ratio	More than 50 dB
General	
Operating Conditions	-10 °C – 60 °C (14 °F – 140 °F) Humidity 90% or less (non-condensing)
Power Supply	12 V DC ± 10% (-A series support 24 V AC ± 10%)
Power Consumption	Max. 2 W (-A series support Max. 3 W)
Dimension	69 x 56 x 113.3 mm (2.72” × 2.20” × 4.46”)
Weight	400 g (0.88 lbs)

Dimension

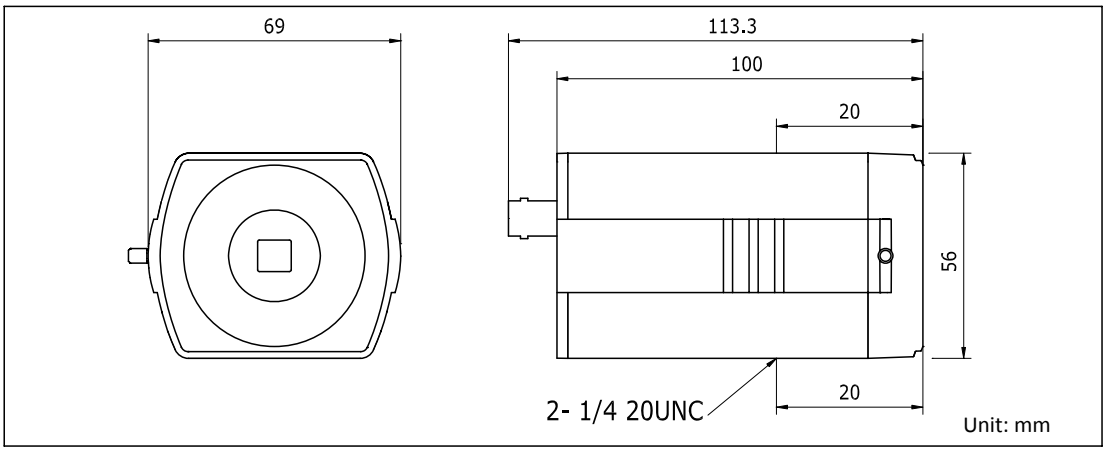


Table 2 DS-2CC1112P(N)(-A)

Specification

Model / Parameter	DS-2CC1112P(N)(-A)
	480 TVL CCD Box Camera
Camera	
Image Sensor	1/3” SONY Super HAD CCD II
Signal System	PAL/NTSC
Effective Pixels	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	0.1 Lux @ (F1.2, AGC ON)
Shutter Time	PAL: 1/50 s to 1/100,000 s NTSC: 1/60 s to 1/100,000 s
Lens Mount	C/CS mount
Auto Iris	DC/Video drive
Day & Night	Electronic
Horizontal Resolution	480 TVL
Synchronization	Internal synchronization (-A series support power synchronization)
Video Output	1Vp-p composite output (75 Ω/BNC)
S/N Ratio	More than 52 dB
General	
Operating Conditions	-10 °C – 60 °C (14 °F – 140 °F) Humidity 90% or less (non-condensing)
Power Supply	12 V DC ± 10% (-A series support 24 V AC ± 10%)
Power Consumption	Max. 2 W (-A series support Max. 3 W)
Dimension	69 x 56 x 113.3 mm (2.72” × 2.20” × 4.46”)
Weight	400 g (0.88 lbs)

Dimension

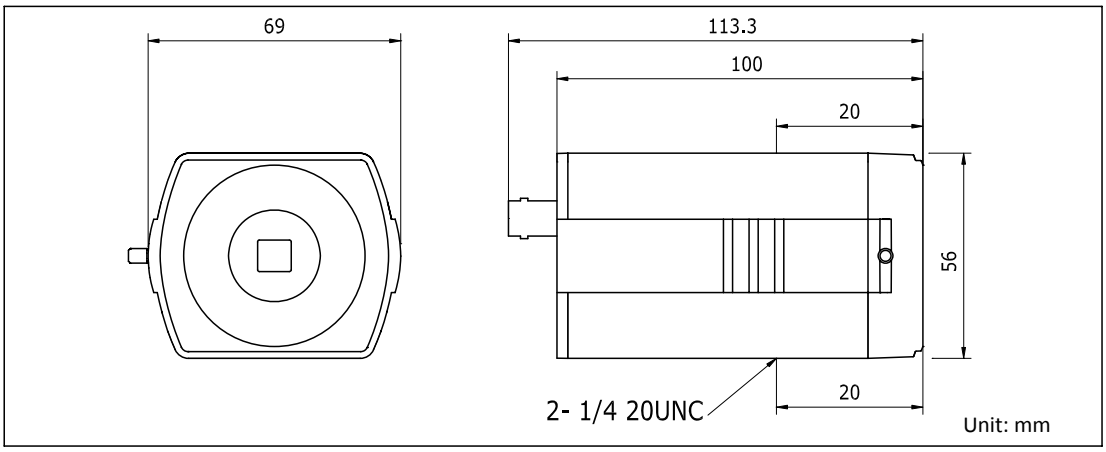


Table 3 DS-2CC1172P(N)(-A)

Specification

Model / Parameter	DS-2CC1172P(N)(-A)
	540 TVL CCD Box Camera
Camera	
Image Sensor	1/3” SONY Super HAD CCD II
Signal System	PAL/NTSC
Effective Pixels	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	0.1 Lux @ (F1.2, AGC ON)
Shutter Time	PAL: 1/50 s to 1/100,000 s NTSC: 1/60 s to 1/100,000 s
Lens Mount	C/CS mount
Auto Iris	DC/Video drive
Day & Night	Electronic
Horizontal Resolution	540 TVL
Synchronization	Internal synchronization (-A series support power synchronization)
Video Output	1Vp-p composite output (75 Ω/BNC)
S/N Ratio	More than 52 dB
General	
Operating Conditions	-10 °C – 60 °C (14 °F – 140 °F) Humidity 90% or less (non-condensing)
Power Supply	12 V DC ± 10% (-A series support 24 V AC ± 10%)
Power Consumption	Max. 2 W (-A series support Max. 3 W)
Dimension	69 x 56 x 113.3 mm (2.72” × 2.20” × 4.46”)
Weight	400 g (0.88 lbs)

Dimension

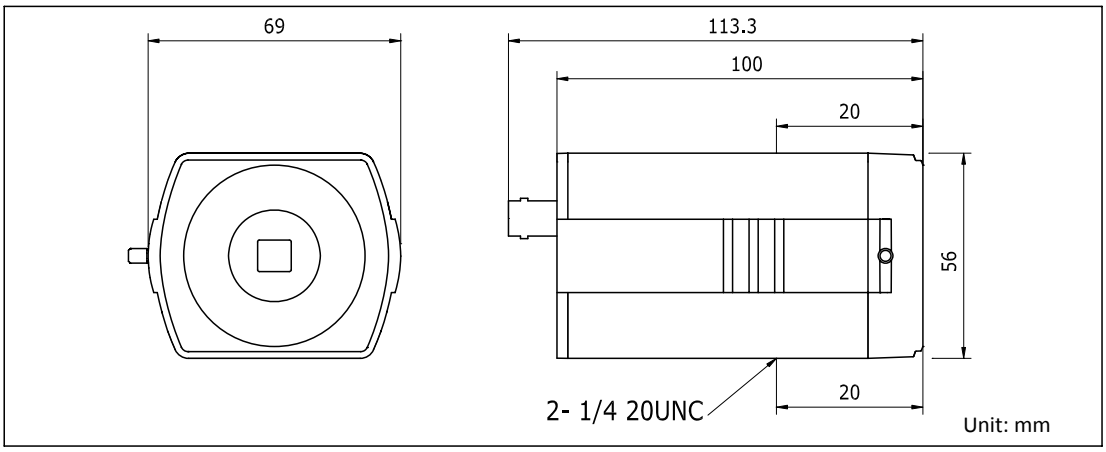


Table 4 DS-2CC1182P(N)(-A)

Specification

Model / Parameter	DS-2CC1182P(N)(-A)
	600 TVL CCD Box Camera
Camera	
Image Sensor	1/3” SONY Super HAD CCD II
Signal System	PAL/NTSC
Effective Pixels	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	0.1 Lux @ (F1.2, AGC ON)
Shutter Time	PAL: 1/50 s to 1/100,000 s NTSC: 1/60 s to 1/100,000 s
Lens Mount	C/CS mount
Auto Iris	DC/Video drive
Day & Night	Electronic
Horizontal Resolution	600 TVL
Synchronization	Internal synchronization (-A series support power synchronization)
Video Output	1Vp-p composite output (75 Ω/BNC)
S/N Ratio	More than 52 dB
General	
Operating Conditions	-10 °C – 60 °C (14 °F – 140 °F) Humidity 90% or less (non-condensing)
Power Supply	12 V DC ± 10% (-A series support 24 V AC ± 10%)
Power Consumption	Max. 2 W (-A series support Max. 3 W)
Dimension	69 x 56 x 113.3 mm (2.72” × 2.20” × 4.46”)
Weight	400 g (0.88 lbs)

Dimension

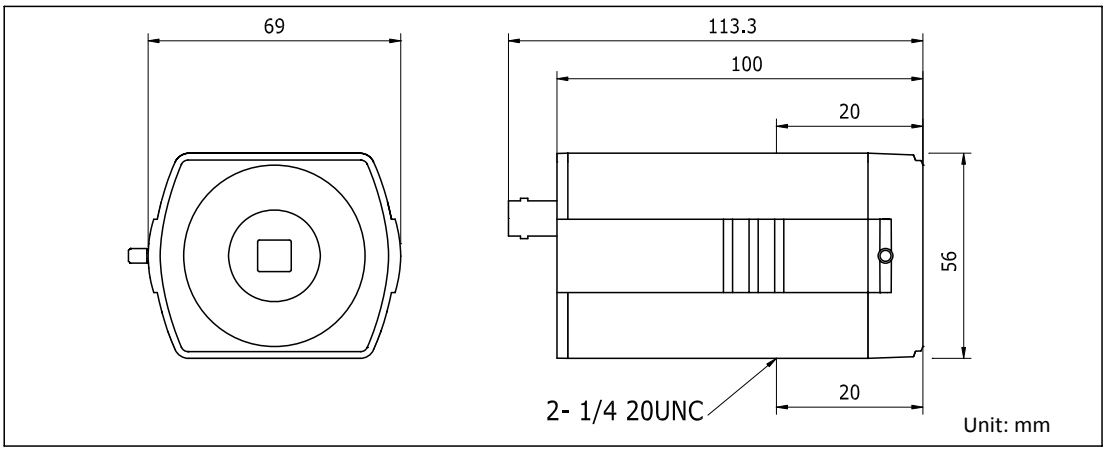
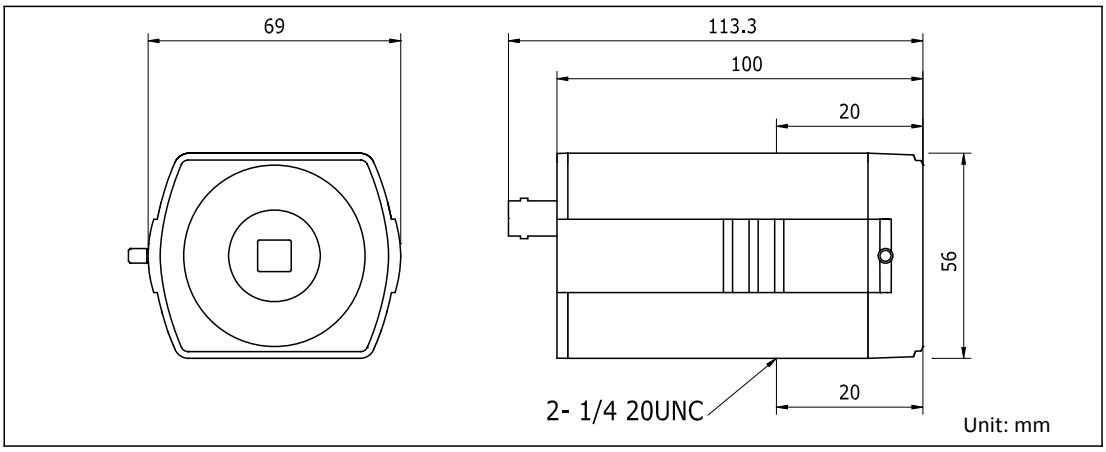


Table 5 DS-2CC1192P(N)(-A)

Specification

Model / Parameter	DS-2CC1192P(N)(-A)
	650 TVL CCD Box Camera
Camera	
Image Sensor	1/3” SONY Super HAD CCD II
Signal System	PAL/NTSC
Effective Pixels	PAL: 976 (H) × 582 (V) NTSC: 976 (H) × 494 (V)
Min. Illumination	0.1 Lux @ (F1.2, AGC ON)
Shutter Time	PAL: 1/50 s to 1/100,000 s NTSC: 1/60 s to 1/100,000 s
Lens Mount	C/CS mount
Auto Iris	DC/Video drive
Day & Night	Electronic
Horizontal Resolution	650 TVL
Synchronization	Internal synchronization (-A series support power synchronization)
Video Output	1Vp-p composite output (75 Ω/BNC)
S/N Ratio	More than 52 dB
General	
Operating Conditions	-10 °C – 60 °C (14 °F – 140 °F) Humidity 90% or less (non-condensing)
Power Supply	12 V DC ± 10% (-A series support 24 V AC ± 10%)
Power Consumption	Max. 2 W (-A series support Max. 3 W)
Dimension	69 x 56 x 113.3 mm (2.72” × 2.20” × 4.46”)
Weight	400 g (0.88 lbs)

Dimension



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